



**ICF international / Laboratory Data Consultants**

Environmental Services Assistance Team, Region 9  
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Phone: (510) 412-2300; Fax: (510) 412-2304.

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager  
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Manager (TOM) *RF*  
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager *[Signature]*  
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041  
Technical Direction Form No.: 00105077 Amendment 3

DATE: September 19, 2007

SUBJECT: Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
Case No.:	36520
SDG No.:	Y3CL3
Laboratory:	Shealy Environmental Services, Inc. (SHEALY)
Analysis:	Trace Volatiles and Volatiles Selective Ion Monitoring (SIM)
Samples:	8 Ground Water Samples (see Case Summary)
Collection Date:	July 17 and 18, 2007
Reviewer:	Santiago Lee, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Cynthia Gurley, CLP PO USEPA Region 4  
Steve Remaley, CLP PO USEPA Region 9

CLP PO: ☐ Attention ☐ Action

SAMPLING ISSUES: ☒ Yes ☐ No

00105077-8356/36520/Y3CL3-TV+VS-T2

## Data Validation Report – Tier 2

Case No.: 36520  
SDG No.: Y3CL3  
Site: Omega Chem OU2  
Laboratory: Shealy Environmental Services, Inc.  
Reviewer: Santiago Lee, ESAT/LDC  
Date: September 19, 2007

### I. CASE SUMMARY

#### Sample Information

Samples: Y3CM3 through Y3CN0  
Concentration and Matrix: Low Concentration Water  
Analysis: Trace Volatiles and Volatiles SIM  
SOW: SOM01.1 and Modification Reference No. 1363.2  
Collection Date: July 17 and 18, 2007  
Sample Receipt Date: July 18 and 19, 2007  
Extraction Date: Not Applicable  
Analysis Date: (Trace Volatiles) July 24, 26, 27, and 30, 2007  
(Volatiles SIM) July 25 and 27, 2007

#### Field QC

Field Blanks (FB): Y3CM9 and Y3CN5 (in SDG Y3CN1)  
Equipment Blanks (EB): Not Provided  
Trip Blank (TB): Not Provided  
Background Samples (BG): Not Provided  
Field Duplicates (D1): Y3CM7 and Y3CM8

#### Laboratory QC

##### Method Blanks & Associated Samples:

VBLK24: Y3CM3, Y3CM4, Y3CM7 through Y3CN0,  
Y3CNOMS, Y3CN0MSD  
VBLK26: Y3CM3DL, Y3CM8DL, Y3CM5DL, Y3CM6DL,  
Y3CM5, Y3CM6  
VBLK1D: storage blank VHBLK01  
VBLK30: storage blank VHBLK01RE  
VBLK25: (Volatiles SIM) Y3CM3 through Y3CN0  
VBLK27: (Volatiles SIM) storage blank VHBLK01

#### Tables

1B: Data Qualifier Definitions for Organic Data Review

#### CLP PO Action

None.

#### CLP PO Attention

None.

## Sampling Issues

1. Samples Y3CM3 through Y3CM9 were received by the laboratory with a cooler temperature of 6.8°C which exceeds the 4±2°C sample preservation criterion. Since the cooler temperature is below 10°C, no adverse effect on data quality is expected.
2. The sampler signature is missing on traffic report & chain of custody records (TR/COCs) for samples collected on 07/16/07 through 07/18/07 (see attached TR/COCs, pp. 6 through 9 in data package).

## Additional Comments

**As directed by the TOM, a Tier 2 review (i.e., verify EXES R-flags, except where alternate non-rejected data exist. Where R-flags are removed, perform Tier 1A forms review and apply appropriate qualifiers) was performed. A Table 1A is not requested.**

The following results were R-flagged by EXES:

- (1) Nondetected results for 1,4-dioxane in trace volatiles and volatiles SIM analyses because relative response factors (RRFs) were below 0.01. A Tier 1A review was not performed for 1,4-dioxane since alternate non-rejected data exist for all field samples in the semivolatile selective ion monitoring (SIM) analysis; field blanks were not analyzed.
- (2) Nondetected results for analytes associated with internal standard (IS) chlorobenzene-d5 in Y3CM8 and for analytes associated with IS 1,4-dichlorobenzene-d4 in Y3CM3, Y3CM4, Y3CM7 through Y3CN0, Y3CN0MS, and Y3CN0MSD and method blank VBLK24 due to IS "area counts that are outside the lower limit of primary criteria." Form 8A (attached, p. 22 in data package), however, indicated that IS area counts did not vary by more than ±40.0% from the associated opening CCV (analyzed on 07/24/07 05:47). Therefore, EXES R-flags were removed and a Tier 1A forms review was performed for these analytes only; no qualification is needed since all method requirements were met.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services Volatile and Semivolatile Data Packages*;
- USEPA Contract Laboratory Program Statement of Work for Organics Analysis, *Multi-Media, Multi-Concentration*, SOM01.1, May 2005; and
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, January 2005.

## **II. VALIDATION SUMMARY**

The data were evaluated based on the following parameters:

	<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1.	Holding Time/Preservation	N/A	
2.	GC/MS Tune/GC Performance	Yes	
3.	Initial Calibration	Yes	
4.	Continuing Calibration	Yes	
5.	Laboratory Blanks	Yes	
6.	Field Blanks	N/A	
7.	Deuterated Monitoring Compounds	Yes	
8.	Matrix Spike/Matrix Spike Duplicates	N/A	
9.	Laboratory Control Samples/Duplicates	N/A	
10.	Internal Standards	Yes	
11.	Compound Identification	N/A	
12.	Compound Quantitation	N/A	
13.	System Performance	N/A	
14.	Field Duplicate Sample Analysis	N/A	

N/A = Not Applicable

### III. OVERALL ASSESSMENT OF DATA

For the analytes and parameters reviewed (see Additional Comments and Validation Summary sections), method requirements specified in the USEPA Contract Laboratory Program Statement of Work for Organics Analysis, SOM01.1, have been met.

**TABLE 1B**

**DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW**

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," January 2005.

- U     The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
- L     Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
- J     The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).
- NJ    The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ    The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
- R     The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.



Organic Traffic Report & Chain of Custody Record

DAS No:

SDG No:

Y3CL1 Y3CL3

L

Date Shipped: 7/16/2007 Carrier Name: FedEx Airbill: 862063630622 Shipped to: Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	<b>Chain of Custody Record</b>		<b>Sampler Signature:</b>	<b>For Lab Use Only</b> Lab Contract No: EPW05031 Unit Price: Transfer To: Lab Contract No: Unit Price:	
	Relinquished By	(Date / Time)	Received By		(Date / Time)
	1	7/16/2007			
	2				
	3				
4			7/17/07 0946		

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No/ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
Y3CL9	Ground Water/ Robert Hernandez	L/G	BNV/1,4-Di (21), SIM TVOA (21)	182 (Ice Only), 183 (Ice Only), 184 (HCL), 185 (HCL), 186 (HCL), 187 (HCL) (6)	Y3CL9	S: 7/16/2007 10:00		
Y3CM0	Ground Water/ Robert Hernandez	L/G	BNV/1,4-Di (21), SIM TVOA (21)	188 (Ice Only), 189 (Ice Only), 190 (HCL), 191 (HCL), 192 (HCL), 193 (HCL) (6)	Y3CM0	S: 7/16/2007 11:10		
Y3CM1	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21)	196 (HCL), 197 (HCL), 198 (HCL), 199 (HCL) (4)	Y3CM1	S: 7/16/2007 12:30		
Y3CM2	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21)	200 (HCL), 201 (HCL), 202 (HCL), 203 (HCL) (4)	Y3CM2	S: 7/16/2007 13:00		

COPY  
ORIGINAL DOCUMENTS INCLUDED IN CASE Y3CL1 30520  
*[Signature]*  
Signature  
07/23/07  
Date

Shipment for Case Complete? <input checked="" type="checkbox"/>	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 48	Chain of Custody Seal Number: NA
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? <input checked="" type="checkbox"/>	Shipment Iced? <input checked="" type="checkbox"/>
BNV/1,4-Di = BNV/1,4-Dioxane, SIM TVOA = CLP TCL Volatiles (including SIM)				

TR Number: 9-373659945-071607-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
Send Copy to: Sample Management Office, 2000 Edmund Hailey Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

LABORATORY COPY



USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record

Case No: 36520

DAS No:

SDG No: Y92L3

L

Date Shipped: 7/16/2007 Carrier Name: FedEx Airbill: 862063630622 Shipped to: Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	<b>Chain of Custody Record</b>		Sampler Signature:	<b>For Lab Use Only</b> Lab Contract No: EPW05031 Unit Price: Transfer To: Lab Contract No: Unit Price:	
	Relinquished By	(Date / Time)	Received By		(Date / Time)
	1 [Signature]	7-16-07 1800			
	2 [Signature]				
	3				
4		[Signature]	7/17/07 0944		

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
Y3CM1	Ground Water/ Robert Hernandez	L/G	SVOA (21)	205 (Ice Only), 206 (Ice Only) (2)	Y3CM1	S: 7/16/2007 12:30		OK

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4-8	Chain of Custody Seal Number: NA
Analysis Key: SVOA = 1,4-Dioxane	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? <input checked="" type="checkbox"/>	Shipment Iced? <input checked="" type="checkbox"/>

TR Number: 9-373659945-071607-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
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**USEPA Contract Laboratory Program**  
**Organic Traffic Report & Chain of Custody Record**

Case No: 36520

DAS No:

SDG No: Y3CL1

L

<b>Date Shipped:</b> 7/17/2007 <b>Carrier Name:</b> FedEx <b>Airbill:</b> 798719686096 <b>Shipped to:</b> Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	<b>Chain of Custody Record</b>		<b>Sampler Signature:</b>	<b>For Lab Use Only</b>  <b>Lab Contract No:</b> EPW05031  <b>Unit Price:</b>  <b>Transfer To:</b>  <b>Lab Contract No:</b>  <b>Unit Price:</b>	
	<b>Relinquished By</b>	<b>(Date / Time)</b>	<b>Received By</b>		<b>(Date / Time)</b>
	1	7-17-07 1400			
	2				
	3				
4			7/18/07 0940		

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
Y3CM3	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21), SVOA (21)	213 (HCL), 214 (HCL), 215 (HCL), 216 (HCL), 217 (Ice Only), 218 (Ice Only) (6)	Y3CM3	S: 7/17/2007 8:12		OK ↓
Y3CM4	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21), SVOA (21)	221 (Ice Only), 222 (Ice Only), 223 (HCL), 224 (HCL), 225 (HCL), 226 (HCL) (6)	Y3CM4	S: 7/17/2007 9:00		
Y3CM5	Ground Water/ Robert Hernandez	M/G	SIM TVOA (21), SVOA (21)	227 (Ice Only), 228 (Ice Only), 229 (HCL), 230 (HCL), 231 (HCL), 232 (HCL) (6)	Y3CM5	S: 7/17/2007 9:35		
Y3CM6	Ground Water/ Robert Hernandez	M/G	SIM TVOA (21), SVOA (21)	233 (Ice Only), 234 (Ice Only), 235 (HCL), 236 (HCL), 237 (HCL), 238 (HCL) (6)	Y3CM6	S: 7/17/2007 10:20		
Y3CM7	Ground Water/ Robert Hernandez	M/G	SIM TVOA (21), SVOA (21)	239 (Ice Only), 240 (Ice Only), 241 (HCL), 242 (HCL), 243 (HCL), 244 (HCL) (6)	Y3CM7	S: 7/17/2007 11:30		
Y3CM8	Ground Water/ Robert Hernandez	M/G	SIM TVOA (21), SVOA (21)	245 (Ice Only), 246 (Ice Only), 247 (HCL), 248 (HCL), 249 (HCL), 250 (HCL) (6)	Y3CM8	S: 7/17/2007 12:00		
Y3CM9	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21)	251 (HCL), 252 (HCL), 253 (HCL), 254 (HCL) (4)	Y3CM9	S: 7/17/2007 13:00		

<b>Shipment for Case Complete?</b> N	<b>Sample(s) to be used for laboratory QC:</b>	<b>Additional Sampler Signature(s):</b>	<b>Cooler Temperature Upon Receipt:</b> 4-8	<b>Chain of Custody Seal Number:</b> NA
<b>Analysis Key:</b> SIM TVOA = CLP TCL Volatiles (Including SIM), SVOA = 1,4-Dioxane	<b>Concentration:</b> L = Low, M = Low/Medium, H = High	<b>Type/Designate:</b> Composite = C, Grab = G	<b>Custody Seal Intact?</b> Y	<b>Shipment Iced?</b> Y

TR Number: 9-373659945-071707-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

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USEPA Contract Laboratory Program  
Organic Traffic Report & Chain of Custody Record

Case No: 36520

DAS No:

SDG No:

Y3CL1, Y3CN1

L

Date Shipped: 7/18/2007 Carrier Name: FedEx Airbill: 799177129103, 7923802365 Shipped to: Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	<b>Chain of Custody Record</b>		<b>For Lab Use Only</b>	
	Relinquished By	(Date / Time)	Sampler Signature:	Received By
	1	7-18-07 1400		
	2			
	3			
	4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
Y3CN0	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21), SVOA (21)	255 (Ice Only), 256 (Ice Only), 257 (Ice Only), 258 (Ice Only), 259 (HCL), 260 (HCL), 261 (HCL), 262 (HCL), 263 (HCL), 264 (HCL), 265 (HCL), 266 (HCL) (12)	Y3CN0	S: 7/18/2007 8:25		
Y3CN1	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21), SVOA (21)	267 (Ice Only), 268 (Ice Only), 269 (HCL), 270 (HCL), 271 (HCL), 272 (HCL) (6)	Y3CN1	S: 7/18/2007 9:15		
Y3CN2	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21), SVOA (21)	273 (Ice Only), 274 (Ice Only), 275 (HCL), 276 (HCL), 277 (HCL), 278 (HCL) (6)	Y3CN2	S: 7/18/2007 10:10		
Y3CN3	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21), SVOA (21)	279 (Ice Only), 280 (Ice Only), 281 (HCL), 282 (HCL), 283 (HCL), 284 (HCL) (6)	Y3CN3	S: 7/18/2007 11:15		
Y3CN4	Ground Water/ Robert Hernandez	M/G	SIM TVOA (21), SVOA (21)	285 (Ice Only), 286 (Ice Only), 287 (HCL), 288 (HCL), 289 (HCL), 290 (HCL) (6)	Y3CN4	S: 7/18/2007 12:12		
Y3CN5	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21)	291 (HCL), 292 (HCL), 293 (HCL), 294 (HCL) (4)	Y3CN5	S: 7/18/2007 13:00		

Y3CN0 last sample

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: Y3CN0	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt 5.3, 4.6	Chain of Custody Seal Number: NA
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? <input checked="" type="checkbox"/>	Shipment Iced? <input checked="" type="checkbox"/>
SIM TVOA = CLP TCL Volatiles (Including SIM), SVOA = 1,4-Dioxane				

TR Number: 9-373659945-071807-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

LABORATORY COPY

8A - FORM VIII VOA  
VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Shealy Environmental Services, Inc.

Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 36520

Mod. Ref No.: \_\_\_\_\_ SDG No.: Y3CL3

GC Column: DB-624 ID: 0.25 (mm)

Init. Calib. Date(s): 07/23/2007 07/23/2007

EPA Sample No. (VSTD####): VSTD0052A

Date Analyzed: 07/24/2007

Lab File ID (Standard): 90724A02

Time Analyzed: 0547

Instrument ID: MSD9

Heated Purge: (Y/N) Y

	IS1 (CBZ) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (DCB) AREA #	RT #
12 HOUR STD	319500	10.371	329050	6.702	166972	12.441
UPPER LIMIT	447300	10.701	460670	7.032	233761	12.771
LOWER LIMIT	191700	10.041	197430	6.372	100183	12.111
EPA SAMPLE NO.						
01 VBLK24	316507	10.370	325777	6.714	162896	12.44
02 VIBLK24	273048	10.371	281899	6.714	141165	12.44
03 Y3CM3	282318	10.370	294321	6.714	147347	12.44
04 Y3CM4	272883	10.370	283580	6.714	138899	12.44
05 Y3CM7	293553	10.371	298907	6.714	153781	12.44
06 Y3CM8	278927	10.370	288566	6.714	145856	12.44
07 Y3CM9	274276	10.371	285350	6.714	142520	12.44
08 Y3CNOMS	271450	10.370	278224	6.714	139529	12.44
09 Y3CNOMSD	268564	10.370	274556	6.714	139351	12.44
10 Y3CNO	280348	10.370	295840	6.714	141579	12.44
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS1 (CBZ) = Chlorobenzene-d<sub>5</sub>

IS2 (DFB) = 1,4-Difluorobenzene

IS3 (DCB) = 1,4-Dichlorobenzene-d<sub>4</sub>

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = + 0.50 (Low-Medium Volatiles) and + 0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = - 0.50 (Low-Medium Volatiles) and - 0.33 (Trace Volatiles) minutes of internal standard RT

# Column used to flag values outside contract required QC limits with an asterisk.